Americans participants in the later stages of CKD may be associated with lack of health care access/ socio-economic factors. The proportion of population suffering from hypertension and diabetes increased significantly from stage 1 to stage 5 along with marked racial disparities in the higher stages of CKD. Markers such as Vitamin D deficiency, Hypertension & serum creatinine levels can be better monitored by regular blood tests and prove to be effective early indicators in the progression of CKD.

URINARY/KIDNEY DISORDERS – Cost Studies

PUK6

FIVE-YEAR BUDGET IMPACT ANALYSIS OF ONCE-DAILY VERSUS TWICE-DAILY TACROLIMUS, IN PATIENTS UNDERGOING RENAL TRANSPLANT IN THE UNITED KINGDOM

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OBJECTIVES: Non-adherence to immunosuppressants increases risk of late acute rejection (AR) episodes, a known predictor of graft loss, which is associated with re-transplantations, dialysis and increased mortality. Once-daily immunosuppressant formulations demonstrate higher patient adherence than multiple daily dose therapies and may lead to fewer AR episodes and graft losses. A model was constructed to estimate the five-year impact of potentially improved adherence in new renal transplant recipients receiving once- rather than twice-daily tacrolimus. **METHODS:** The increased potential for sufficient adherence with once-daily immunosuppressants, versus twice-daily, is reported as an odds ratio (OR) of 2.35 (published literature). The model uses a probability of sufficient adherence of 74% with once-daily tacrolimus, determined from an assumed adherence for twice-daily tacrolimus of 55% and OR for adherence with once- versus twice-daily therapy. Increased adherence is assumed to improve consistency in tacrolimus exposure, reducing AR each year post-transplant and improving graft survival. Sufficient levels of expected adherence with once- and twice-daily tacrolimus are used to model five-year survival rates for: AR (sufficiently-adherent versus non-sufficiently-adherent patients); graft survival (no previous AR versus previous AR); patient survival (functioning graft versus dialysis). Drug costs include tacrolimus; co-prescribed therapies (IV and oral prednisolone and oral mycophenolate mofetil). Other resource use and costs considered include management of AR; dialysis after graft loss; re-transplantation. **RESULTS:** Over five years, assuming 100 new renal transplant recipients annually, once-daily tacrolimus is associated with fewer AR episodes than twice-daily (8.4 and 10.5, respectively), due to improved sufficient adherence. Once-daily tacrolimus yields cumulative cost savings of £104,534, including savings in drug acquisition (£69,180); management of AR (£22,837); re-transplantation (£417); dialysis (£13,631). **CONCLUSIONS:** Use of once- rather than twice-daily tacrolimus reduces incidence of AR and could yield clinical improvements and cost savings over five-years.

PUK7

IMMUNOSUPPRESSANT THERAPY PATTERNS AND ITS COSTS IN POST KIDNEY TRANSPLANT PATIENTS IN THE NATIONAL TRANSPLANT PROGRAM IN BRAZIL

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OBJECTIVES: Immunosuppressive drugs (IS) are used in combination/schemes to achieve optimal regimen of immunosupression, increasing graft and recipient survival rates in post kidney transplant patients. The aim of this study is to determine immunosuppressant treatment patterns and associated costs in kidney transplant patients from the Brazilian National Transplant Program. **METHODS:** A review of the entire government administrative claim database (Outpatient Information System – SIA/DATASUS) was conducted from 2005 to 2008, to determine yearly expenses (in 2008 USD) with each IS combination. In order to assess the dynamics of the combinations used, a subset of this population, all patients from 7 hospitals who underwent kidney transplantation in 2004, was followed from January 2005 to December 2007 to estimate calcineurin inhibitors (CNI) switching rate and treatment adherence in terms of 24-month medication possession ratio (MPR). **RESULTS:** Analysis of the entire database reveals that overall IS expenses in kidney transplant patients more than doubled, from US$62,429,359 in 2005 to US$126,874,381 in 2008, mostly due to an increase in both treatment volume and costs from 2006 to 2007. From 2005 to 2007, monthly treatment volume increased 14.7% for cyclosporine and 62.9% for tacrolimus, whereas costs increased 3.2% for cyclosporine and 93.1% for tacrolimus. The highest financially impacting combination per CNI were tacrolimus plus mycophenolate sodium (US$37,329,606 in 2008), and cyclosporine plus mycophenolate sodium (US$10,163,990 in 2008). A total of 540 patients were eligible for the subpopulation analysis. CNI therapy switch rate, from tacrolimus to cyclosporine or vice-versa was 4.3% (n = 185). MPR for CNIs was 73.7% (n = 224; SD = 21.7%). **CONCLUSIONS:** From 2005 to 2008, IS drugs expenses in post kidney transplant patients substantially increased in Brazil. Low CNI switching rates suggests that *de novo* patients are the main target population for newer CNIs. The poor drug adherence detected is an important point of concern.

PUK8

ERYTHROPOIESIS-STIMULATING AGENTS UTILIZATION AND COSTS IN PATIENTS WITH CHRONIC KIDNEY DISEASE NOT ON DIALYSIS FROM TWO LARGE CLAIMS DATABASES

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OBJECTIVES: This study evaluated recent erythropoiesis-stimulating agent (ESA) utilization and costs from 2 large health insurance claims databases in chronic kidney disease (CKD) patients not on dialysis. **METHODS:** An analysis of recent medical claims from the Ingenix IMPACT (January 2006-March 2009) and Medicare 5% (January 2005-December 2007) databases was conducted. Patients ≥18 years, newly initiated on epoetin alfa (EPO) or darbepoetin alfa (DARB), with ≥1 claim for CKD and ≥2 ESA claims were included. Patients diagnosed with cancer, receiving chemotherapy or dialysis, or receiving both agents were excluded. Mean cumulative ESA dose was used to calculate drug cost (using October 2009 wholesale acquisition cost) and dose ratio (Units EPO: mcg DARB). Multivariate analysis was also conducted to assess adjusted cost differences between the two agents. **RESULTS:** A total of 4,678 ESA-treated patients were identified (IMPACT—EPO: 991, DARB: 689; Medicare—EPO: 1,788, DARB 1,210). Age and gender distributions were similar between the 2 groups (Mean age: IMPACT: 63.9 vs. 63.2 yrs; Medicare: 74.7 vs. 74.2 yrs, P = NS; % women: IMPACT: 49% vs. 54%; Medicare 59% vs. 62%, P = NS). ESA treatment duration was also similar for EPO and DARB patients. The mean cumulative dose [SD] was 164,786 [175,453] and 244,718 [304,839] Units for EPO and 694 [690] and 989 [1,118] mcg for DARB, resulting in dose ratios of 237:1 and 247:1 for IMPACT and Medicare data, respectively. Based on the recent utilization of ESAs, cumulative cost was 44% and 38% higher for DARB than EPO (IMPACT—EPO $2380; DARB $3427; Medicare—EPO $3534; DARB $4888). After adjusting for covariates, cumulative drug costs remained significantly higher for DARB. **CONCLUSIONS:** Based on large health insurance claims databases, this observational study of recent ESA utilization in CKD patients not on dialysis reported dose ratios of 237:1 and 247:1 and cost premiums of 44% and 38% associated with DARB.

PUK9

SEVEN YEAR TRENDS OF PHARMACY BENEFIT ERYTHROPOIESIS-STIMULATING AGENT UTILIZATION AND COST CONSIDERATIONS OF CHRONIC KIDNEY DISEASE PATIENTS NOT ON DIALYSIS

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OBJECTIVES: This study compared drug utilization patterns and associated costs as well as dosing trends over time in patients with chronic kidney disease (CKD) not on dialysis receiving epoetin alfa (EPO) or darbepoetin alfa (DARB) through a pharmacy benefit. **METHODS:** An analysis of pharmacy claims between July 2002 and March 2009 from the Ingenix IMPACT database was conducted. Patients ≥18 years, newly initiated on erythropoiesis-stimulating agents (ESAs), with ≥1 claim for CKD, and ≥1 ESA pharmacy claim were included. Patients diagnosed with cancer, receiving chemotherapy or dialysis, or receiving both agents were excluded. Mean cumulative ESA dose was used to calculate drug cost (using 10/2009 wholesale acquisition cost) and dose ratio (Units EPO: mcg DARB). Average weighted weekly ESA dose was calculated during the treatment episode to assess ESA utilization trends over time. Multivariate analysis was also conducted. **RESULTS:** A total of 4,202 ESA-treated patients were identified (EPO 3,111; DARB 1,091). EPO patients were slightly older (60.1 vs. 57.0, $P < .001$) with a higher Charlson Comorbidity Index (1.68 vs 1.44, $P < .001$). Mean [SD] cumulative dose was 219,060 [236,830] Units for EPO and 818 [956] mcg for DARB, resulting in a dose ratio of 268:1 (Units EPO: mcg DARB). The corresponding drug cost was 28% higher for DARB than EPO ($3163 vs. $4039, $P < .001$). From 2002 to 2009, a decreasing trend was observed in semi-annual mean weekly doses of ESAs [EPO: 17,053 to 13,674 Units (25% decrease); DARB: 63 to 51 mcg (20% decrease)]. After adjusting for potential confounding factors, the DARB cost premium and the decreasing weekly ESA dosing trend over time remained significant. **CONCLUSIONS:** This study of CKD patients not on dialysis receiving ESAs through pharmacy benefits reported significantly higher drug costs in the DARB group compared with the EPO group and a decreasing ESA dosing trend during the 7-year study period.

PUK10

IMPROVED RESOURCE UTILIZATION OUTCOMES ASSOCIATED WITH PREDIALYSIS USE OF PARICALCITOL FOR SECONDARY HYPERPARATHYROIDISM (SHPT)

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OBJECTIVES: The objective of this study is to evaluate hospitalizations, outpatient services and medication use in the first year of dialysis associated with pre-dialysis treatment with paricalcitol compared to no predialysis vitamin D receptor (VDR) activator use in chronic kidney disease (CKD) patients with SHPT. **METHODS:** A matched cohort analysis was conducted in 154 hemodialysis patients comparing utilization outcomes of predialysis use of paricalcitol compared to no VDR activator treatment, using the Medstat™ administrative claims database from 2000–2007. Patients were matched using propensity scoring for age, gender, Charlson co-morbidity Index, and pre-index total costs. Multivariate models adjusted for age, gender,